

## Things to Know, Understand and Do For Chapters 15 and 16: Acid/Base Chemistry

*By the end of Chapters 15 and 16 you should...*

<b>Know how to...</b>
List the five general properties of acids and bases
Name common binary acids and oxyacids
Give the three definitions of acids and bases (Arrhenius, Brønsted-Lowry, Lewis)
Give the formulas and name the strong acids and bases
Recognize the type of acid or base from the name or formula
Describe a conjugate acid, conjugate base, and an amphoteric compound
Explain the process of a neutralization reaction
Describe the auto-ionization of water
Define pH, explain pH, and use the pH scale,
Given $[H^+]$ find pH, pOH or $[OH^-]$ , Given $[OH^-]$ find pH, pOH, or $[H^+]$
Explain how to perform an acid base titration
Calculate the molarity of an unknown solution from titration data
Define end point, equivalence point, and standard solution

<b>Understand...</b>
The difference between the different definitions of acids and bases (Arrhenius, Brønsted-Lowry, Lewis)
The difference between a strong and weak acid or base
The difference between a monoprotic and polyprotic acid
That protons dissociate one at a time
That a strong conjugate acid has a weak conjugate base and vice versa
That neutralization is just a proton combining with a hydroxide ion to make water
That hydronium ions and protons are the same thing
How pH, pOH, self-ionization, and $K_w$ all work
What indicators are, how they change color, and why they are useful
The difference between end point and equivalence point

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